

Marine I

Name _____

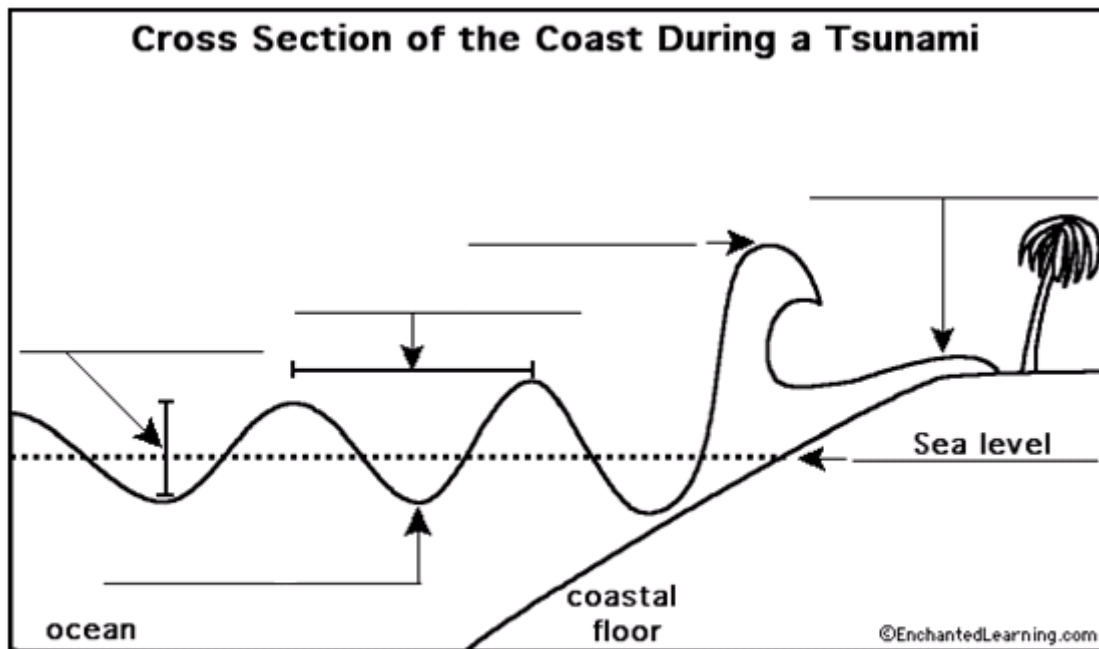


Tsunami Guided Research Project

Directions: Complete the diagrams and questions below using your notes, Chapter 17 & 18, and the suggested internet resources at the end of this assignment.

Part I – Tsunami Characteristics

1. Complete the diagram using the word bank below the picture.



Word Bank:

Crest
Runup
Sea level

Trough
Wave height
Wavelength

2. What exactly is a tsunami?
3. How is the speed of a tsunami calculated?
4. If the depth of a tsunami wave is measured to be 100m, calculate its speed.
(hint: see suggested resource #2)

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5. How are tsunamis different from wind-generated waves?
6. How strong does an earthquake have to be (Richter scale measurement) to create a tsunami?
7. If you were relaxing on the beach before a tsunami hit, what would be your first clue that a tsunami is coming?

Part II – Tsunamis of the Past

8. Using link #4 on the Chilean tsunami of 1960, complete the following:
 - a. It took _____ hours to reach New Zealand.
 - b. It took _____ hours to reach the Aleutian Island.
 - c. It took _____ hours to reach Hawaii.
 - d. It took _____ hours to reach the Western Australia.
9. Using link #5 – the interactive tsunami map, select any two tsunamis, read the background on them, and list two facts about each event
 - a. Tsunami #1 –
 -
 -
 - b. Tsunami # 2 –
 -
 -
10. Using link #6 you can see a series of satellite images taken before and right after the 2004 Sumatran tsunami. Take a look at the images and describe four differences you notice between the before and after images:
 - a.
 - b.
 - c.
 - d.

Part III – Tsunami Warning Systems and Tsunamis of the future...

11. Read the tsunami story book from link #7 to answer the following:
 - a. How is the first warning of a tsunami given to the people in Hawaii?
 - b. Why can't the ship feel the tsunami out at sea?
 - c. Why do tsunamis have to be far away to get warning out in time?
 - d. How do the sirens warn people of a tsunami on the way? When is it sounded?
12. The East Coast of the United States is also at risk of a tsunami (that's us.) Use links 8 & 9 to answer the following:
 - a. How would this tsunami be caused?
 - b. Where is this cause located?
 - c. How long would it take the tsunami to reach us?

Suggested Internet Resources:

1. <http://www.ga.gov.au/hazards/tsunami/>
2. <http://science.howstuffworks.com/tsunami3.htm>
3. <http://www.enchantedlearning.com/subject/tsunami/>
4. http://wcatwc.arh.noaa.gov/web_tsus/19600522/19600522.htm
5. http://www.nerc-bas.ac.uk/tsunami-risks/past_events/index.html
6. <http://homepage.mac.com/demark/tsunami/>
7. <http://wcatwc.arh.noaa.gov/book01.htm>
8. <http://www.terraily.com/2004/041226152117.76iv431d.html>
9. <http://geology.com/news/2006/09/canary-island-tsunami-threat.html>